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ABSTRACT

The assessment of educational outcomes has been a major area of interest among policy makers in recent years. Those with responsibility for assessment often are drawn from the ranks of the faculty and have little knowledge of or interest in institutional research. This paper provides a means to distinguish the unique, yet interrelated ways in which assessment and institutional research serve those requiring information for policy purposes. It proposes that the way to establish quality assessment is to develop a model of what needs to be done and then obtain the means for getting the tasks done. Suggestions are provided on how to improve the effectiveness of a cooperative method by describing the relationship with a five-step model: (1) identify and measure, (2) capture and store, (3) restructure and analyze, (4) deliver and report, and (5) use and influence. Examples of specific tasks which are most likely to be required are provided as well as some suggestions on coordination of effort. (Contains 14 references.) (GLR)

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Assessment: A Collaborative Model

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Gerry McLaughlin, John A. Muffo, Harriott D. Calhoun

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Abstract

The assessment of educational outcomes has been a major area of interest among policy makers in recent years. Those with responsibility for assessment often are drawn from the ranks of the faculty and have little knowledge of or interest in institutional research. This paper provides a means to distinguish the unique, yet interrelated ways in which assessment and institutional research serve those requiring information for policy purposes.

Introduction

"Implementing a successful assessment program requires a fusion of three quite different activities. First, assessment is about teaching, and neglecting the instructional focus means that there is little point to the exercise. Second, assessment is research; consequently, it demands attention to classic researchers' questions of method, inference, and ethics. Finally, assessment is an administrative activity. Certainty, in the early stages of implementing assessment, organizational issues are paramount, as this stage often involves resolving such questions as incentives and new assignments of responsibilities."

Ewell's points about assessment do an outstanding job describing the nature of assessment and also help explain the complexity in the way assessment is done within institutions. Effective assessment requires the inclusion of individuals who are experts in the issues of learning and instruction; it requires individuals who are experts in technical methodology; and it involves those who are knowledgeable in organizational administration. While the lines and roles are complex and are not limited to any given individual within an institution, the three frames of reference often involve someone in Assessment, someone in Institutional Research, and someone in the institution who is an expert in specific technical issues.

How Outcomes Assessment Works

Most campus outcomes assessment efforts are driven by external reporting requirements. Initially these have come from state-level governing or coordinating boards like those in Tennessee, South Carolina, Georgia, Florida, Colorado, Oklahoma, and Virginia. With regional accrediting groups such as the Southern Association of Colleges and Schools (SACS) and North Central Association of Colleges and Schools, not to mention disciplinary accrediting groups, adopting outcomes assessment requirements for accreditation purposes, more and more colleges and universities

are being required to formally address the degree to which they are evaluating student learning. While institutions may initiate such efforts based on a shared desire for organizational improvement, the reality is that normally colleges and universities do not undertake such programs without substantial encouragement from external bodies.

The types of requirements imposed from the outside often determine to a great extent the kinds of information gathered and how that information is reported. In situations where standardized tests are the norm and where disciplinary faculty have little input into the process of selecting the instruments, the outcomes assessment activity becomes synonymous with standardized testing in the minds of most students, faculty, and administrators involved. In such instances, a testing or assessment center becomes the focal point of the process and serves mainly to administer the tests and report the results internally and externally. Some technical assistance might be provided to academic units in interpretation or, in those cases where the unit itself has some control over test content and selection, in test construction. Generally speaking, however, the outcomes assessment function is perceived to be tangential to the day-to-day teaching and learning operations of the institution.

In environments where colleges and universities have more control over what and how they report in the outcomes assessment arena, several approaches have been utilized to meet reporting requirements while attempting to provide useful information for internal curricular growth and development. The centralized testing center is one model that occurs in more top-down situations, but there are also variations on it that allow for more input and involvement from teaching faculty. On the other end of the spectrum are outcomes assessment programs that operate more as brokers and consultants, providing minimal direction but substantial support to those within the institution who have an interest in studying teaching and learning issues. At research oriented universities with substantial graduate programs, much of this kind of research can be conducted by graduate students with faculty supervision and direction. The faculty reward systems at community colleges and baccalaureate institutions can provide further incentives for faculty from a variety of academic disciplines to study outcomes assessment within their areas of specialization. Most outcomes assessment programs in states allowing flexibility in meeting reporting requirements fall between the two extremes of top-down and versus decentralized brokering. Most involve some activities best done

at the institutional level, such as surveys of student opinion, mixed with other activities which are more departmentally driven. The former are necessary to provide institutional level perspectives while the latter are more effective in involving faculty in curricular re-examination and reform.

Building a Quality Process for Assessment

The literature on quality offers insights useful to implementing assessment processes. It has established the importance of identifying a process model in the creation of a means for continuous improvement. One of the more successful such models is the Sheward model of Plan, Do, Check, and Act (Imai, 1986). It's application might be as follows:

- PLAN: Develop a conceptual model for assessment that defines the scope of the effort, develops a measurement plan, and allocates resources for the assessment.
- DO: Use the measures to capture and store the data in a reliable manner, restructure and analyze the data to focus on the use of the results.
- CHECK: After each part in the process of assessment, consider the degree to which results generalize to the concerns of the institution and the various stakeholders. This relevance comes as the results are delivered to the users and interpreted in various reports. Results are used to improve the assessment process.
- ACT: Use results to identify the need to make decisions, clarify the alternatives, make decisions, and advocate positions. The user needs to determine the correctness of beliefs about reality and refine what is still not known. Questions from ACTING go into PLANNING.

The PDCA cycle described above casts assessment as an information process. A similar model selected for this paper is the Information Support Circle which has been specifically developed to improve the quality of information and the resulting decision making (McLaughlin and Howard, 1991). This model represents the specific steps of the PDCA as they relate to information support. Planning comes from the development of a belief about what is assessment and how do we measure the components. Doing assessment results in the capture and storage of the data and in the restructuring and analysis of these data into interpretable information. Checking comes from the delivery of the data to the user and determining its value. Acting is where the user influences the

situation and increases what is known about outcomes. The results from the use of the information includes the determination of modifications to the beliefs about the process and a refinement of the next set of questions.

This circle, shown in Figure 1, also indicates the dependence of process quality on those in three roles of Supplier, Producer, and User and the dependence on the process quality on the interactions of those in these three roles. Quality comes from the continuous circling through the five functions with the interactions of the roles. The quality is no better that the weakest function. This is a major departure from the traditional top-down "get me the following data."

The roles identified by Ewell have some link to the three roles in the Circle with the responsibilities of instruction being a source of activity related to the Supplier, methodology of defining outcomes to the Producer, and organizational use of information to the User. It might be tempting to assign Institutional Research (IR) the Producer role, Outcomes Assessment (OA) the role of Supplier, and quibble over who is the User. Yielding to this temptation may well result in disagreements and concerns about whose job is what.

The way to establish quality assessment is to develop an understanding and a model of what needs to be done and then to have a means for getting the tasks done. Table 1 takes the roles of OA and IR and looks at the types of issues they might address in each of the five functions. It also has a column for some of the assistance which might come from other specialists.

Steps Which Must Be Taken

Within the framework of Table 1, the following is a more detailed description of the steps and a list of the types of tasks which occur in each step. These tasks and descriptions of the functions were compiled from considerations of what is required for quality outcomes assessment from the various references and then sorted into the five functions. In addition, the authors rated each task as being a task for Institutional Research (I), Outcome's Assessment (O), or a shared responsibility for both (B).

1. Identify and Measure:

Assessment should be based on a conceptual model, not only of the program being assessed, but also of the context in which it exists where the components of the environment are related to the anticipated process and product. This model should include the nature of student change in a manner consistent with the objectives, vision, and other characteristics of the institution. This conceptual model also identifies the goals as well as the components and constructs of the assessment process. Summative evaluations are especially dependent on the identification of goals for the program. In this case, the goal of the assessment is typically to measure outcomes which indicate the degree to which the program achieves its goals. If formative methodology is used, then the evaluation of the process does not have an automatic goal but will tend to look for opportunities for improvement.

Measurement is the identification of the specific measures which will be used in the evaluation. This includes the outcomes as well as the process and where appropriate, the input measures. Key issues of the various stakeholders, objectives of the assessment, and likely use of the results should be considered.

a. (B)Begin with what is considered important and is valued.
b. (B)Start with issues of how assessment results will be used and focus on important things.
c. (O)Have clear, explicitly stated purpose and goals for assessed programs.
d. (O)Consider learning to be multidimensional, integrated with participants' beliefs, and revealed in performance.
e. (O)Consider both the outcomes and the processes which produced the outcomes.
f. (O)Involve a broad range of the educational community in the evaluation.
g. (I)Include data about longitudinal student enrollment and performance by student type.
h. (B)Include measures about what happens to graduates including participation and performance in careers.
i. (O)Include measures about what students know and can do.
j. (B)Identify level of aggregation based on the audience to whom the report is made and the decisions they need to make.
k. (I)Identify relevant institutional variables already available.

1. (O)Select the variables after reviewing literature, looking at previous. institutional studies, and talking to knowledgeable individuals.

2. Capture and Store:

After identification of the items to be measured, the data must be obtained from some source and then stored in a manner so that it is secure, accessible, and has documented procedures and definitions. Data can come from four basic types of research methodologies (Brewer and Hunter, 1989).

- Field-work where the worker enters natural social groups and studies them, as far as possible, in their full and natural state.
- Survey research which uses questionnaires obtaining data from a large number of individuals.
- Experimentation where the researcher changes specific parts of the situation which is to determine causality with the control of various measures and then the manipulations of the other measures.
- Nonreactive research which uses the strategy of searching out data which already exists such as in course grade data bases and opportunities for unobtrusive measurement such as news on alumni.

The best idea is to put the various types of research into combinations, so outcomes assessment must be prepared to handle all four types of data. More specifically, these methods will yield data based on the specific location of the individual at the time of the activity. Procedures are necessary to bring the data into the institutional systems and to store it so that others can find them and interpret sampling and measurement procedures. This includes knowing the data bases which currently exist as well as how to manage data. For example, standard categories and codes will need to be developed if career patterns are to be part of the data base so that trends will represent changes in the outcomes rather than changes in the coding procedure.

a. (B)Create data systems useful for various groups of individuals; they should be flexible and usable in various environments; they should be simple and easy to use.

b. (I)Obtain data required from and sometimes develop new student unit record systems.

c. (I)Require data bases to meet proper standards of data management and administration.

d. (I)Include analysis data such as measures of demographic, educational background, initial enrollment status descriptors, and institutional activity such as credit hours taken, major, etc.

e. (B)Check for sources for the data and augment where needed with most augmentation from the internal design of questionnaires for various groups of potential students, students, and former students.

f. (B)Have proper psychometric properties for surveys and send to the proper sample.

g. (B)Clearly define field studies and various observation methods to remove perceiver bias and subjectivity.

h. (I)Extract relevant data elements from the operating system and put into a census file.

i. (I)Merge data from various multiple academic periods into a single file.

3. Restructure and Analyze:

Restructuring and analysis are the means of merging and converting the data into the users' frame of reference along with the process of reducing the complexity of the data without major losses of relevant detail. They involve integrating various data sets and focusing them on the issues of the assessment. The data being integrated and restructured include the traditional institutional data such as student characteristics, organizational indices such as applications, and developmental data such as from attitude surveys. Restructuring the data moves the data from being measures of input into the products and processes of the program which is under assessment. Data should be summarized and analyzed such that inferences of causality can be made with reasonable interpretations. Data reduction occurs by looking only at subgroups, combining variables, and looking at trends. The analysis phase of information support reduces the amount of data to something which can be considered by an individual while retaining the major facts in the data. This step concerns the internal validity of the assessment and is critical for the interpretation of the causality of the program in producing the outcomes being considered.

a. (I)Include standard persistence measures such as percentages enrolled at "normal progress', enrolled but not at normal progress, and enrolled but not in good standing.

b. (I)Include degree-completion indicators such as percentage completing programs, time to completion, and percentage of credits required at graduation.

c. (I)Use contextual indicators for the institution such as percent attempting normal progress and attending continuously.

d. (B)Use multivariate procedures and, where possible, adjust for various conditions which occur while the students are enrolled such as changing the institutional calendar.

e. (B)Use a combination of methods and look at the results from several perspectives since all methods and measures have limitations in the interpretation of results.

f. (B)Analyze the data with a focus on the concerns and the capabilities of the users.

g. (B)Use statistical procedures which can be replicated by others.

h. (B)Use definitions consistent with external reports, where possible.

4. Delivery and reporting:

The results need to provide user support so that the user can generalize the results of the assessment for the various desired uses. The delivery of the results should be structured so that the user can check whether the results and data apply to other current situations and/or future situations. If the program worked will it work next year? Delivery and reporting should allow the user to determine how to use the results in a valid manner. This is particularly critical if the information is made available in raw form for user analysis since the user would not have the full description and possible admonitions of a report.

There is a dimension of refinement of the results as provided to the user. At the raw end of the dimension are the data themselves, often after some editing and subset selecting and merging. Such a delivery would be the student longitudinal file. At the other end of the refinement of data is the highly refined, integrated, and interpreted conclusion and recommendation on the program being considered or the outcome being evaluated. Most of the deliveries are between these two extremes with tables, descriptions, some conclusions, and some suggestions offered for further research.

The ability to generalize results comes from checking them against the model noted above in the identification and measurement of the activities and process. As noted earlier, this model is most likely a set of beliefs about "how things work here" held by a key administrator and shared to varying degrees within the institution culture. In classical methodology this generalization check is the same as the test of the adequacy of the theory from which we gain knowledge and either change our belief of reality or choose to collect additional data.

The value of the results comes from their applicability to various students. Results of an outcomes assessment can be checked for value based on their:

a. Adequacy - How well do the empirical results support previously held beliefs?
b. Methodology focus - Do result come from the content without methodology bias?
c. Measurement focus - Were the parts appropriately measured?
d. Causal inference - Did results support ability to attribute outcomes to specific causes?
e. Generalization - How well can one generalize the results to other groups?
f. Realism - Does the simplification of beliefs from the use of available measures adequately represent reality? (Brewer, Hunter, 1990).

If these questions can not be answered affirmatively, then the mismatch of the assessment and the needs of the institution prevent the external validity of the assessment and limit the influence of its results in any possible use. The following are some of the steps which are done in outcomes assessment to support the delivery of quality results to potential users:

a. (I)The delivery systems and documentation must be easy to use and at the level of the users ability.
b. (B)Data should be put in a system where statistics can be computed in an easy manner.
c. (B)Reporting is ongoing and evaluated and refined as an ongoing process.
d. (O)Reporting encourages dealing with real problems and not working just to maximize the numbers.
e. (O)The degree to which the results can be generalized to various groups is determined as part of the process.
f. (B)Results are integrated into the standard information systems of the college.
g. (O)Results are distributed to the various committees of the college.

5. Use and Influence:

A key part of the use and influence of results from assessment is the degree to which the results change the way people perceive reality at the institution. The influence of the assessment rests on the amount of change it makes in the beliefs of individuals. Facts increase the knowledge of the various participants and will also help identify next steps, unknown components, and data needs. The results enable the user to test and clarify the constructs which form beliefs about reality, how the process does work, and how it should work. This requires that the results be tied back to the constructs of the conceptual model which was used to guide the study. Results of the assessment need to be integrated into the thought and decision process of the individuals involved in making resource and procedure decisions.

Some of the major possible uses and influences of assessment results are to:

a. (O)Demonstrate that responsibilities to the public and students are being met.
b. (O)Increase emphasis on links between higher education and wider society goals of renewed economic development and global competitiveness.
c. (O)Move the focus of accountability from equitable access and efficiency to "return on investment."
d. (B)Meet the requirements of laws related to information on students.
e. (B)Make results part of a larger set of conditions that promote change.
f. (O)Maintain academic standards and do not "remove" real standards.
g. (O)Maintain access to higher education.
h. (O)Keep implementation costs in line.
i. (O)Provide contextual information that allows conclusions about the factors responsible for variations in performance.
j. (O)Encourage the development of "best practice" at the institutional level in the support of research on outcomes.
k. (O)Build a dialogue around the results of the assessment using short issue oriented studies and reports.
l. (B)Modify student recruitment and retention program development.
m. (I)Revise student data bases.

n. (I)Use in planning and budgeting.

Developing Cooperation and Coordination

A summary analysis of the data above produces several quick observations. Of the fifty specific activities, the largest of the three categories involves both IR and OA with forty percent of the tasks identified as most likely for both functions (B). The next interesting fact is that the results of the analysis tends to cast IR in the role of the Supplier and OA in the role of User. This differs from the initial belief of most likely roles. At the same time, there is tremendous overlap. Effective assessment is dependent on description of duties and cooperative efforts.

The literature on organizational behavior, group processes, and learning theory speaks to the centrality of cooperation and coordination in effective task accomplishments. Outcomes assessment in higher education involves complex tasks that receive diverse levels of understanding and commitment by the various segments of the institution. The model proposed here is one of collaboration in which the key players on the assessment field (the suppliers, producers, and users of data) maximize the results of their efforts through effective cooperation and coordination.

In synthesizing the experiences of seven institutions involved in improving the use of outcomes information in decision making, Kennick (1989) has identified both organizational and technical factors that appear to be highly related to the use of assessment results. Briefly, these factors pertain to the institution's organizational and managerial environment and to the qualities of the assessment information itself. Calhoun (Nichols, 1991) has described the need to use both time and personnel effectively in an institutional assessment program. The organizational environment, technical qualities of the data, and time constraints are all pertinent to the effective performance of suppliers, producers, and users of assessment results.

The following suggestions are directed toward overcoming the organizational, time, and personnel constrains that impede use of outcomes information.

a. Articulate the reason for assessment (external requirements, internal commitment, both).

b. Formulate policies for release of results and use of findings for formative and summative evaluation.

c. Establish linkage and dialogue among the suppliers, producers, and users of assessment results.

d. Provide opportunity for meaningful interaction among those who develop, manage, and use institutional data bases so that there are numerous opportunities to detect and correct system errors.

e. Identify appropriate assessment activities at the institutional and department/program levels; determine responsibilities at each level and provide adequate support.

f. Inventory student outcomes information that is already available and communicate its availability throughout the institution.

g. Establish priorities that insure reasonable access to existing data bases.

h. Organize information around issues or problems that the institution is committed to addressing.

i. Summarize findings so that the "bottom line" is easily reached by those who are less than enamored with the detail required by scientific methodology.

j. Balance thoroughness with timeliness so that adequate information is available to support decision making before the opportunity to decide has passed.

k. Establish baseline information and set targets so that expectations of results are realistic.

l. Develop a routine mechanism for reviewing results and recommending use.

m. Integrate use of results with the planning and program review processes of the institution.

Institutions that assess themselves with appropriate and realistic measures not only have information vital for improvement but also the means with which to demonstrate effectiveness to others. Implementing a program of assessment makes substantial demands on already limited resources of time, personnel, and money. Appropriate coordination and cooperation are essential for maximizing the benefits of this commitment.

In summary, it was the intent of the authors to show that the roles of OA and IR are tightly entwined in doing successful assessment. Also, suggestions were provided on how to improve the effectiveness of a cooperative method by describing the relationship with a five

step model, providing examples of specific tasks which are most likely to be required, and finally offering some suggestions on coordination of effort. These are meant to be descriptive in content and process rather than proscriptive in policy or procedure.

Bibliography

Astin, A. W., Banta, T. W., Cross, K. P., El-Khawas, E., Ewell, P. T., Hutchings, P., Marchese, T. J., McClenney, K. M., Mentkowski, M. Miller, M. A., Moran, E. T., & Wright, B. D. (December 1992). Principles of good practice for assessing student learning. American Association for Higher Education.

Brewer, J., & Hunter, A. (1990). Multimethod Research (2nd printing). Newbury Park, CA: Sage Publications, Inc.

Endo, J. (1992). Student impacts. In M. A. Whiteley, J. D. Porter, and R. H. Fenske (eds.), The Primer for Institutional Research, 25-36). Tallahassee: AIR

Ewell, P. T., & Jones, D. P. (July 1991). Assessing and reporting student progress: A response to the "new accountability". State Higher Education Executive Officers, 1-52.

Ewell, P. T. (1989). Information for decision: What's the use? New Directions for Institutional Research, 64, San Francisco:Jossey-Bass.

Ewell, P. T. (1987). Principles of longitudinal enrollment analysis, conducting retention and student flow studies. In John A. Muffo and G. W. McLaughlin (eds.), A Primer on Institutional Research, 1-19. Tallahassee: AIR

Ewell, P. T. (ed.). (1985). Assessing educational outcomes. New Directions for Institutional Research, 47. San Francisco: Jossey-Bass.

Ewell, P. T. (1988). Implementing Assessment: Some Organizational Issues. In P. T. Ewell (ed.), Implementing Outcomes Assessment: Promise and Perils. New Directions for Institutional Research, 59. San Francisco:Jossey-Bass.

Imai, M. (1986). Kaizen New York: McGraw-Hill.

Kinnick, M. K. (September 1985). Increasing the use of student outcomes information. New Directions for Institutional Research, 47.

Lenth, C. S. (Spring 1991). Using national data bases. New Directions for Institutional Research, 69.

National Association of State Universities and Land Grant Colleges Council on Academic Affairs (November 1988). Statement of principles on student outcomes assessment.

Nichols, J. O. (1989). Institutional Effectiveness and Outcomes Assessment Implementation on Campus: A Practitioner's Handbook. New York: Agathon Press.

Nichols, J. O. (1991). A Practitioner's Handbook for Institutional Effectiveness and Student Outcomes Assessment Implementation. New York: Agathon Press.

Figure 1

Information Support for Assessment

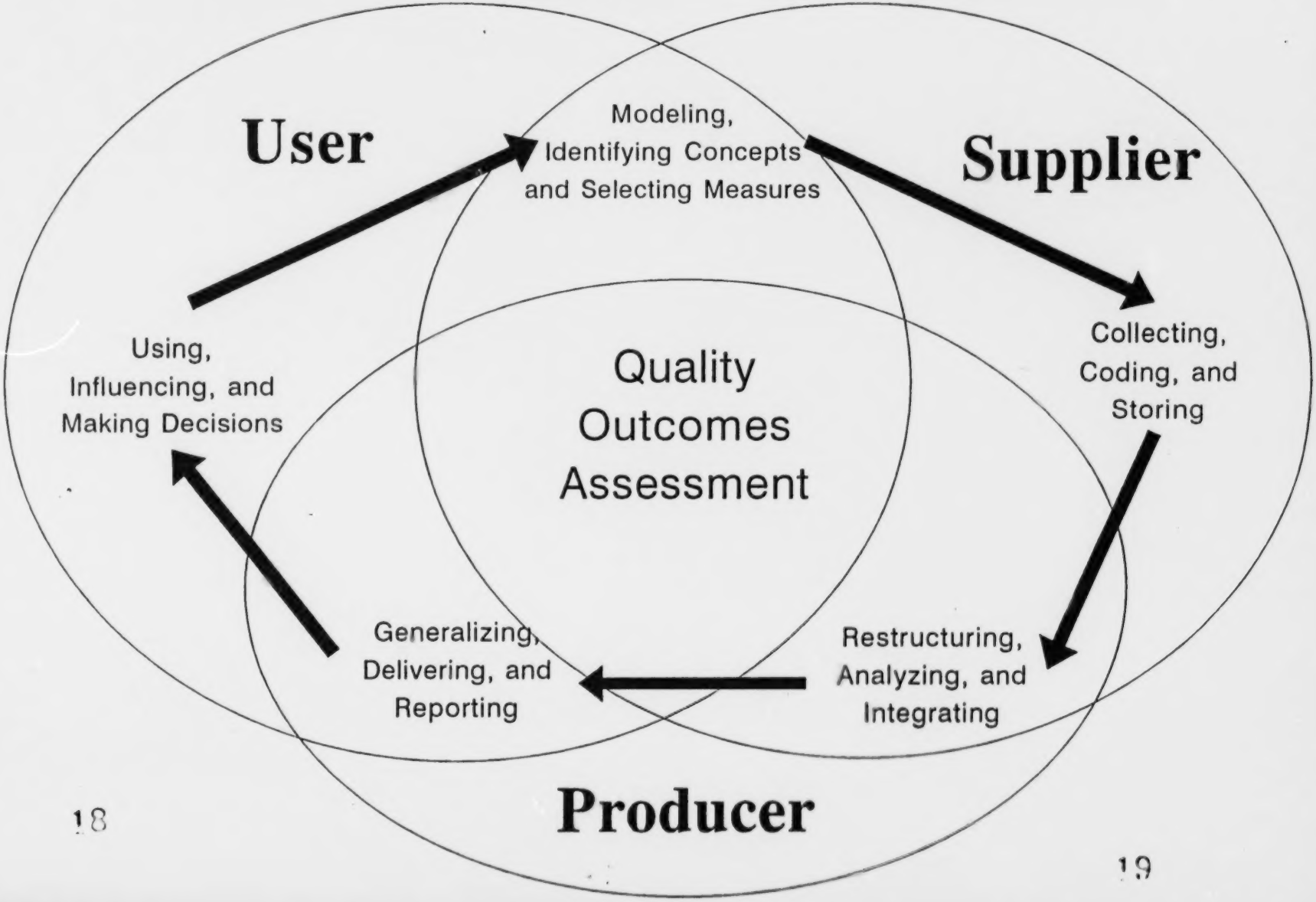

Table 1
Matrix of Activities for Assessment

Information Circle Function	Institutional Researcher	Outcomes Assessor	Methodology Expert	Technical Expert
Identify	Organizational Goals	Development	Learning Theories	Supplier
& Measure	College Measures	Students	Experimental Design	Support
Capture	Data Management	Surveys, Tests	Triangularization	Source Point
& Store	Legacy Systems	Qualitative Techniques	Measurement Theory	Data Capture
Restructure	Data Integration	Causality	Advanced	Software
& Analyze	Basic Statistics	Evaluation Methods	Statistics	Platforms
Deliver	Multi Media	Committees	Technical Writing	MIS
& Report	Committees	Profession	Public Speaking	Networks
Use &	Administration	Faculty	Research	DSS,EIS
Influence	Managers	Higher Educators	Professional	